# PHASE CHART

#### PROJECT DESCRIPTION

## I. GENERAL

This project involes the installation of the southeast corner traffic signal pole and associated equipment for the existing traffic control signal at the intersection of MD 197 (Laurel-Bowie Rd) and Montpelier Dr/Brock Bridge Rd in Prince George's County.

### II. INTERSECTION OPERATION

The intersection currently operates in a NEMA 6-phase, full-traffic-actuated mode with an exclusive left turn phase for the northbound and southbound approaches, a concurrent pedestrian phase across the west leg, an alternate pedestrian phase across the north leg of the intersection and a pre-emption phase for the northbound movement.

# III. CONTROLLER REQUIREMENTS

The existing fully-traffic-actuated eight phase traffic signal controller with a video detection system, intersection monitor with battery back-up for phone drop, detector rack, loop detector amplifiers, and opticom system housed in a NEMA size "6" base mounted cabinet will be used.

		1 ()R-) ()Y-) ()G-)	2 (R) (V) (G)	R Y G	4 R Y G	5 (R) (B) (B)	6 (R) (Y) (G)	7 R Y G	8 R Y G	9 R Y G	10 R Y G	11 R Y G	12 R V	13 (R) (Y) (G)	1 4 R Y G	15 例 尖	16 小 头	15 <b>小</b> 头	16	
	PHASE 1 & 5	⊲G—		R	R	⊲G—	<b>⊲</b> G- `.	R	R	R	R	R	R	R	R	DW	DW	DW	DW	一分日
	1 & 5 CHANGE	PHASE 1 & 5 CHANGE MAY CHANGE TO PHASE 1 & 6, 2 & 5 OR 2 & 6										1 ,	DW	DW	DW	DW	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
€	PHASE 1 & 6			G	G	R	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	4
	1 CHANGE	<b>⊲</b> Y−	<b>⊲Y</b> −	G	G	⊲R-	⊲R-	R	R	R	R	R	R	R	R	DW	DW	DW ·	DW	+ ← +
	PHASE 2 & 5	⊲R-	⊲R—	R	R	⊲G-	⊲G—	G	G	R	R	R	R	R	R	DW	DW	DW	DW	一分日
	5 CHANGE	⊲R-	⊲R-	R	R	<b>⊲Y</b> −	<b>⊲Y</b> −	G	G	R	R	R	R	R	R	DW	DW	DW	DW	-
	PHASE 2 & 6		⊲R-	G	G	⊲R-	⊲R—	G	G	R	R	R	R	R	R	WK	WK	DW	DW	
	PED CLEAR	⊲R—	⊲R-	G	G	⊲R-	⊲R—	G	G	R	R	R	R	R	R <sub>.</sub>	FL/DW	FL/DW	DW	DW	
	2 & 6 CHANGE	<b>⊲R</b> –	⊲R—	Υ	Υ	⊲R−	⊲R—	Υ	Y	R	R	R	R	R	R	DW	DW	DW	DW	00
	PHASE 4 & 8	⊲R−	⊲R-	R	R	⊲R−	⊲R-	R	R	G	G	G	G	G	G	DW	DW	DW	DW	7 1
	4 & 8 CHANGE	⊲R−	⊲R—	R	R	⊲R−	⊲R-	R	R	Υ	Υ	Υ	Υ	Υ	Υ	DW	DW	DW	DW	<u> </u> -
	PHASE 4 & 8 ALT.	⊲R-	⊲R−	R	R	⊲R—	⊲R-	R	R	G	G	G	G	G	G	DW	DW	WK	WK	P H
	PED CLEAR	⊲R-	⊲R-	R	R	⊲R−	⊲R—	R	R	G	G	G	G	G	G	DW	DW	FL/DW	FL/DW	
	4 & 8 ALT.CHANGE	⊲R-	⊲R—	·R	R	⊲R-	⊲R-	R	R	Y	Υ	Υ	Υ	Y	Υ	DW	DW	DW	DW	누이 I
	PRE-EMPTION #1			G	G	⊲R—	⊲R-	R	R	R	R	R	R	R	R	DW	DW	DW	DW	<u>T</u>
	PRE-EMPTION #1 CHANGE	<b>⊲</b> Y−	<b>⊲Y</b> −	Υ	Υ	⊲R—	⊲R-	R	R	R	R	R	R	R	R	DW	DW	DW	DW	 
	FLASHING OPERATION	FL/R	FL/R	FL/Y	FL/Y	FL/R	FL/R	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK	→ <del>↑</del>

MR. SONNY BAILEY, SIGN OPERATIONS PHONE: (410) 787-7676

MR. MIKE STOCKER, SIGNAL SHOP WAREHOUSE PHONE: (410) 787-7696

- SEE SPECIAL NOTE NO.1

EXISTING INTERCONNECT

- B,C,D,E,F,H,K,L,M,N

---- B,E,F,H,K,L,N

 $H \triangleleft \Phi$ 

 $G \triangleleft \varphi$ 

B,E,F,H,K,L,N ---

B,E,F,H,K,L,N —

—— G,H,K,L

WIRING DIAGRAM - A,B,C,D,E,F,H,J,K,L,M,N A,B,C,D,E,F,H,J,K,L,M,N A,B,C,D,E,F,H,J,K,L,M,N WIRING KEY PROPOSED PREMANUFACTURED CAMERA

SPECIAL NOTE

EXISTING CONTROLLER.

EXISTING SPAN WIRE -

1. DISCONNECT CABLE "C,D AND M" FROM EXISTING CONTROLLER AND PULL BACK OVER EXISTING SPAN TO THIS HANDHOLE AND RE-ROUTE THROUGH PROPOSED CONDUIT AND HANDHOLE AND RE-CONNECT TO

- TO CONTROLLER CABLE (250 FT.)
- PROPOSED PREMANUFACTURED CAMERA TO CONTROLLER CABLE (500 FT.)
- C-D EXISTING MICROLOOP PROBE LEAD-IN CABLE.
- PROPOSED 2 CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.)
- PROPOSED 3 CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- G-I 5 CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- 7 CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- M EXISTING 12-PAIR COMMUNICATION CABLE, JELLY-FILLED UNDERGROUND
- STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- PROPOSED GROUND ROD
- PS EXISTING OVERHEAD SERVICE

# SPECIAL NOTES 1. THE FOLLOWING CONTACT PERSONS FOR THIS PROJECT ARE AS FOLLOWS: DISTRICT 3: MR. RAY MERCADO TEAM LEADER - TRAFFIC PHONE: (301) 513-7316 MR. KEVIN NOWAK, ASSISTANT DISTRICT ENGINEER - CONSTRUCTION PHONE: (301) 513-7385 MR. WAYNE MOWDY, ASSISTANT DISTRICT ENGINEER- MAINTENANCE PHONE: (301) 513-7304 MR. AUGIE REBISH, UTILITY ENGINEER PHONE: (301) 513-7350 OFFICE OF TRAFFIC AND SAFETY: MR. RICHARD L. DAFF, SR. CHIEF TRAFFIC OPERATIONS DIVISION PHONE: (410) 787-7630 MR. ED RODENHIZER, SIGNAL OPERATIONS PHONE: (410) 787–7652

EQUIPMENT LIST C

EQUIPMENT LIST A

EQUIPMENT LIST B

CATEGORY CODE NO.

973023

900000

**CATEGORY** 

CODE NO.

203030

802501

805118

805135

811001

813015

816001

816005

866204

837001

861106

861107

800000

800000

860284

A. EQUIPMENT TO BE FURNISHED BY SHA.

DESCRIPTION

DESCRIPTION

CONCRETE FOR SIGNAL FOUNDATION

NO. 6 AWG STRANDED BARE COPPER GROUND WIRE

4 INCH SCHEDULE 80 RIGID PVC CONDUIT - BORED

FURNISH AND INSTALL ELECTRICAL HANDHOLE

CONTROL CABLE, 250 FOOT VIDEO DETECTION

CONTROL CABLE 500 FT. VIDEO DETECTION

3 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED

INSTALL STEEL POLE WITH A SINGLE MAST ARM - ANY SIZE EA

GROUND ROD 3/4 INCH DIAMETER X 10 FOOT LENGTH

ELECTRICAL CABLE 3 CONDUCTOR (NO. 14 A.W.G.)

ELECTRICAL CABLE 5 CONDUCTOR (NO. 14 A.W.G.)

ELECTRICAL CABLE 7 CONDUCTOR (NO. 14 A.W.G.)

ELECTRICAL CABLE 2 CONDUCTOR (NO. 12 A.W.G.)

DISCONNECT, PULLBACK AND RE-ROUTE EXISTING CABLES

REMOVE AND DISPOSE OF EQUIPMENT AND MATERIAL

12 INCH L.E.D. VEHICULAR SIGNAL HEAD SECTIONS

MAINTENANCE OF TRAFFIC

TEST PIT EXCAVATION

INSTALL OVERHEAD SIGN

VIDEO DETECTION CAMERA

CAMERA, TO CONTROLLER

CAMERA TO CONTROLLER

SHEET ALUMINUM SIGNS

1 EACH R3-5(L) 30" X 36" -

1 EACH D3-2 DUAL FACE

VAR. X 16" - MAST ARM MOUNT

32 FOOT TWIN (50FT/70FT.) MAST

ARM POLE AND 70 FT. MÁST ARM

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.

MAST ARM MOUNT

QUANTITY

QUANTITY

330

420

1095

365

**UNITS** 

CY

SF

EA

EA

EA

C. EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND DELIVERED TO MSHA. ALL UNUSED EQUIPMENT AND MATERIAL REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.



& KAHL, LLP CONSULTING ENGINEERS

**8I MOSHER STREET** BALTIMORE, MARYLAND 21217 TEL: (410) 728-2900 FAX: (410) 383-3270



TRAFFIC ENGINEERING DESIGN DIVISION GENERAL INFORMATION SHEET MD 197 (LAUREL - BOWIE RD)

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION

AND MONTPELIER DRIVE

CHECKED BY: SHEET NO. PRINCE GEORGE'S T.I.M.S. NO. **APRIL, 2005** ) G MILE: 16019712.99

RUMMEL, KLEPPER